UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,384	09/10/2003	Malcolm Betts	85773-432	4129

26123   7590   05/10/2007
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PARK, JUNG H

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
05/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/658,384	BETTS ET AL.
	Examiner	Art Unit	
	Jung Park	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-49</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-4,7-14,17-32, 37-46, 48, and 49</u> is/are rejected.

7) ☒ Claim(s) <u>5,6,15,16,33-36 and 47</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All b) ☐ Some * c) ☐ None of:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____.

       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Drawings Objections

1.   The drawings are objected to because drawing elements in Figures 2 and 3 need

descriptive text label. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are

required in reply to the Office action to avoid abandonment of the application.

> Any amended replacement drawing sheet should include all of the figures appearing on the
> immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number
> of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the
> appropriate figure must be removed from the replacement sheet, and where necessary, the remaining
> figures must be renumbered and appropriate changes made to the brief description of the several views of
> the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of
> the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in
> the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes
> are not accepted by the examiner, the applicant will be notified and informed of any required corrective
> action in the next Office action. The objection to the drawings will not be held in abeyance.

Appropriate correction required.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (e) the invention was described in a patent granted on an application for patent by another filed in the United
> States before the invention thereof by the applicant for patent, or on an international application by another
> who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the
> invention thereof by the applicant for patent.

3.   Claims 11-14, 17-23, 25-32, 37, 38, 41-43, 45, 46, 48, and 49 are rejected under 35

U.S.C. 102(e) as being anticipated by Boodaghians (US 6965572, "Boodaghians").

        Regarding claims 11, Boodaghians discloses a data packet implemented for

transmission in a data network having one or more layers, comprising:

a) a label stack (label stacks 1-N, see fig.1), the label stack including one or more labels

on the basis of which the data packet can be switched in the data network (labels, see 1

fig.1 and col.2, ln.1-13), each label having a switching significance in one or more of the layers of the data network (5-8 fig.1 and col.2, ln.1-13);

b) at least one layer identifier (3 fig.1) associated with at least one label in the label stack (fig.1 and col.2, ln.10-13).

Regarding claim 12, Boodaghians discloses, wherein the layer identifier allowing to distinguish between identical labels having switching significance in different layers of the data network (col.2, ln.10-13)."

Regarding claim 13, Boodaghians discloses, "wherein the layer identifier allowing to determine in which layer of the data network the at least one label has a switching significance (col.2, ln.1-13)."

Regarding claim 14, Boodaghians discloses, "wherein the label stack includes a layer identifier associated with each label in the label stack (fig.1 and col.2, ln.1-13)."

Regarding claim 17, Boodaghians discloses, "wherein the label stack is of variable size allowing entities in the data network processing the data packet to push labels in the label stack and pop labels from the label stack (replace labels, see col.2, ln.21-30)."

Regarding claim 18, Boodaghians discloses, "including an address of an entity in the data network at a layer of the data network to which the data packet is destined (6 fig.1)."

Regarding claim 19, Boodaghians discloses, "wherein the address is an IP address (6 fig.1)."

Regarding claim 20, Boodaghians discloses, "including a payload (5 fig.1)."

Regarding claim 21, Boodaghians discloses a network entity, the network entity comprising:

a) one or more input ports (ports, see fig.4) for receiving data packets to be label switched (col.5, ln.41-44);

b) one or more output ports (ports, see fig.4) for releasing data packets from the network entity (col.5, ln.48-55);

c) a switching controller (processing unit, see 65 fig.4) for switching a given data packet received at one of the input ports to one of the output ports (ports, fig.4) on a basis of a label contained in the given data packet (col.5, ln.57-65), the switching controller operative to ascertain if the label contained in the given data packet has a switching significance in the layer of the data network to which the network entity is associated (identifies …processing …, see col.5, ln.57-67)."

Regarding claim 22, Boodaghians discloses, "the switching based on the information contained in the given data packet (fig.1)."

Regarding claim 23, Boodaghians discloses, "completing the switching of the given data packet when the switching controller ascertains (transmitting, see col.5, ln.54-56)."

Regarding claim 25, Boodaghians discloses, "wherein the given data packet has a label stack, the label contained in the given data packet being in the label stack (fig.1)."

Regarding claim 26, Boodaghians discloses, "wherein the information contained in the given data packet is in the label stack (fig.1)."

Regarding claim 27, Boodaghians discloses, "wherein the information contained in the given data packet is a layer identifier (3 fig.1)."

Regarding claim 28, Boodaghians discloses, " wherein the data packet contains a layer identifier associated with each label in the label stack (as shown in fig.1)."

Regarding claim 29, Boodaghians discloses, "wherein the switching controller is capable to push a label in the label stack (col.5, ln.57-64)."

Regarding claim 30, Boodaghians discloses, "wherein when pushing a certain label in the label stack the switching controller also inserting a layer identifier in the given data packet associated with the certain label (fig.1)."

Regarding claim 31, Boodaghians discloses, "wherein the switching controller capable to pop a label from the label stack (col.5, ln.57-64)."

Regarding claim 32, Boodaghians discloses, "wherein when popping a certain label from the label stack the switching controller also removes a layer identifier from the given data packet associated with the certain label (fig.1)." ·

Regarding claim 37, Boodaghians discloses, "wherein the network entity is an LSR (fig.3)."

Regarding claim 38, Boodaghians discloses a method for label switching data packets in a data network having one or more layers, the method comprising:

a) receiving a data packet at a location in the data network (fig.3) associated with at least one of the layers of the data network (domains & layers, see fig.3 and fig.1), the at least one layer being a first layer (MPLS, see fig.3), the data packet containing at least one label (label, see fig.1 and fig.3);

b) ascertaining if the label has a switching significance in the first layer (MPLS domain table, see 10 fig.3);

c) switching the data packet at the location on the basis of the label (label table, see fig.3) if the ascertaining indicates that the label has a switching significance in the first layer (MPLS domain, see 10 fig.3).

Regarding claim 41, Boodaghians discloses, "wherein the data packet has a label stack comprising a plurality of labels, the switching being performed on a label in a topmost position in the label stack (topmost, see fig.1 and col.2, ln.21-30)."

Regarding claim 42, Boodaghians discloses, "wherein the ascertaining is performed on a basis of information contained in the data packet (fig.1)."

Regarding claim 43, Boodaghians discloses, "wherein the information contained in the data packet is a layer identifier associated with the label in the topmost position in the label stack (fig.1 and col.2, ln.21-30)."

Regarding claims 45 and 46, they are claims corresponding to claims 29 and 31, respectively and are therefore rejected for the similar reasons set forth in the rejection of the claims.

Regarding claim 48, it is a claim corresponding to claim 38, except the limitation of "network operator (65 fig.4)" and is therefore rejected for the similar reasons set forth in the rejection of claim 38.

Regarding claim 49, it is a claim corresponding to claim 21 and is therefore rejected for the similar reasons set forth in the rejection of claim 21.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art
are such that the subject matter as a whole would have been obvious at the time the invention was made to
a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
negatived by the manner in which the invention was made.

5.   Claims 1-4, 7-10, 24, 39, 40, and 44 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Boodaghians.

        Regarding claim 1, it is a claim corresponding to claim 11, except the limitation

of "computer-readable medium". However, it would have been obvious to one of ordinary

skill in the art at the time of applicant's invention was made to use software-based

machines. The benefit using computer-readable medium is that program can be

changed and upgraded and new features. Therefore, this claim is rejected for the similar

reasons set forth in the rejection of claim 11.

        Regarding claims 2-4 and 7-10, they are claims corresponding to claims 12-14

and 17-20, respectively and are therefore rejected for the similar reasons set forth in the

rejection of the claims.

        Regarding claim 24, Boodaghians does not explicitly disclose, "wherein the

switching controller does not effect the switching of the given data packet when the

switching controller ascertains that the label contained in the given data packet has no

switching significance in the layer of the data network to which the network entity is

associated." However, when the data packet travels IP domain the label is not required

to process (IP domain and MPLS domain, see fig.3). Therefore, it would have been

obvious to one of ordinary skill in the art at the time knows that the switching controller

does not process MPLS label when the packet travels outside of MPLS domain with the

motivation of standard compliance.

Regarding claim 39, Boodaghians does not explicitly disclose, "comprising

precluding label switching the data packet when the ascertaining indicates that the label

has no switching significance in the first layer." However, when the data packet travels

IP domain the label is not required to process (IP domain and MPLS domain, see fig.3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time knows

that the switching controller does not process MPLS label when the packet travels

outside of MPLS domain with the motivation of standard compliance.

Regarding claim 40, Boodaghians does not explicitly disclose, "comprising

declaring an error in connection with the data packet." However, it would have been

obvious to one of ordinary skill in the art at the time of applicant's invention to generate

an error message when a processor processing MPLS label in IP domain with the

motivation of standard compliance.

Regarding claim 44, Boodaghians does not explicitly disclose, "wherein the

ascertaining comprises comparing the layer identifier with an identifier of the first layer."

However, it would have been obvious to one of ordinary skill in the art at the time of

applicant's invention to utilize a single stack bit (see 3 fig.1) to ascertain that the next

hop is outside of MPLS domain by comparing the stack bit and MPLS label with the

motivation of standard compliance.

Allowable Subject Matter

6.   Claims 5, 6, 15, 16, 33-36, and 47 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Jung Park whose telephone number is 571-272-8565. The

examiner can normally be reached on Mon-Fri during 6:15-3:45.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

JP
Jung Park
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